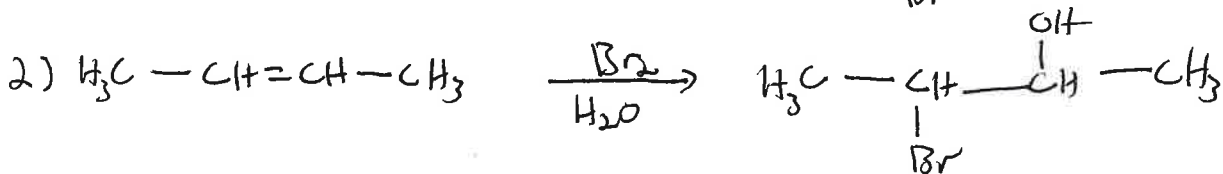
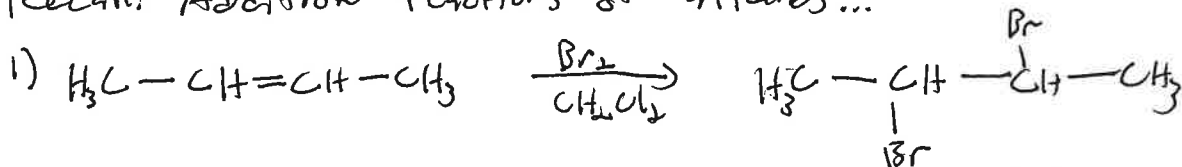
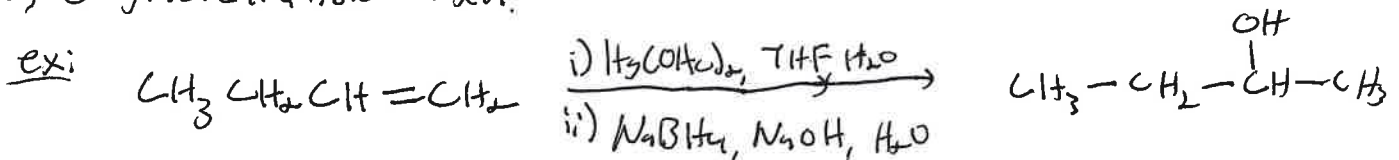


Submit a *Single-sided Copy* to the Undergraduate Office
NO NOT STAPLE - ONLY WRITE NOTES INSIDE THE SQUARE BELOW

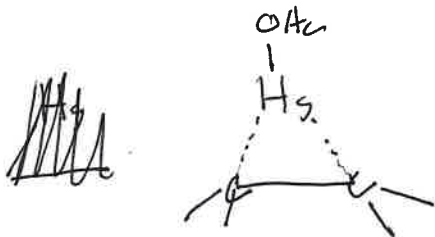
Recall: Addition reactions of alkenes...



3) Oxymercuration rxn.

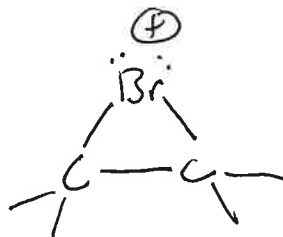


Mechanisms/Intermediates



3 atoms
2 e⁻'s

vs.

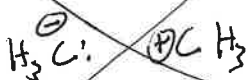


3 atoms
4 e⁻'s

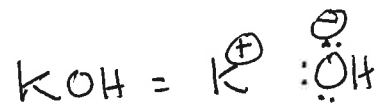
Covalent bonds vs. ionic interactions



~~NOT~~



~~NOT~~



~~NOT~~

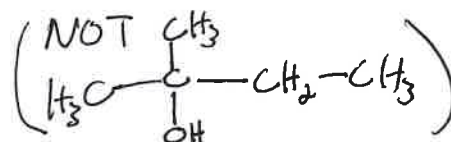
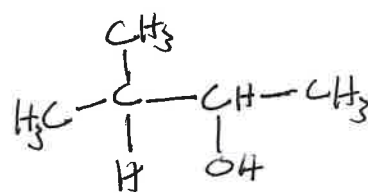
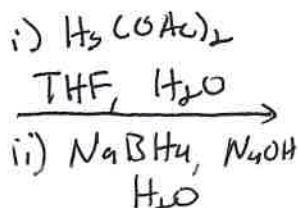
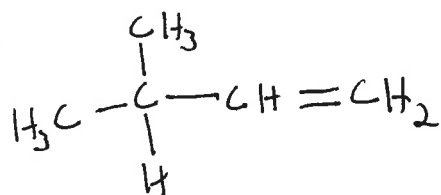


Submit a *Single-sided Copy* to the Undergraduate Office
NO NOT STAPLE - ONLY WRITE NOTES INSIDE THE SQUARE BELOW

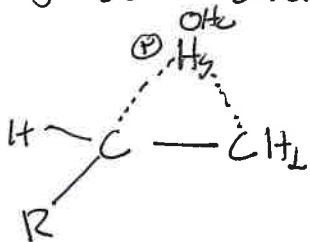
First Step - Mechanism (oxymercuration reaction)

→ No "free carbocation", thus no carbocation rearrangement products

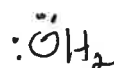
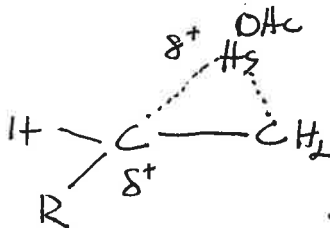
Ex:



Why do we observe Markovnikov selectivity?

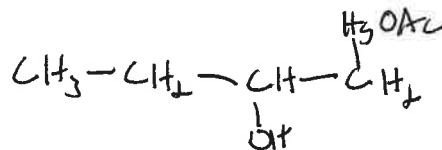


is really

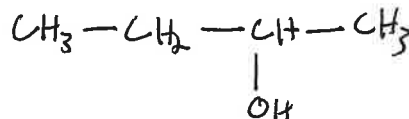
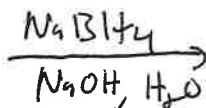


Nucleophile prefers carbon w/ greatest build-up of positive charge

Second step of oxymercuration ⇒ mechanism is unclear.



isolable, but extremely toxic



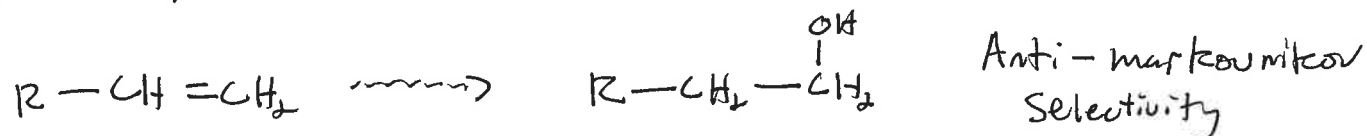
Hg^0 (ppt)

Note: Hydration of alkene w/out problems from carbocation rearrangements.

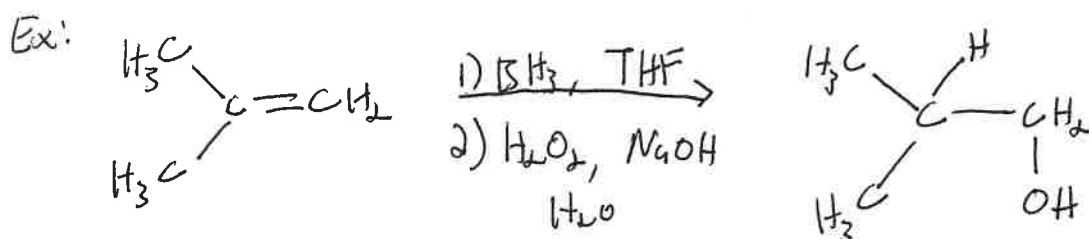
Submit a *Single-sided Copy* to the Undergraduate Office
NO NOT STAPLE - ONLY WRITE NOTES INSIDE THE SQUARE BELOW

Hydroboration - Oxidation

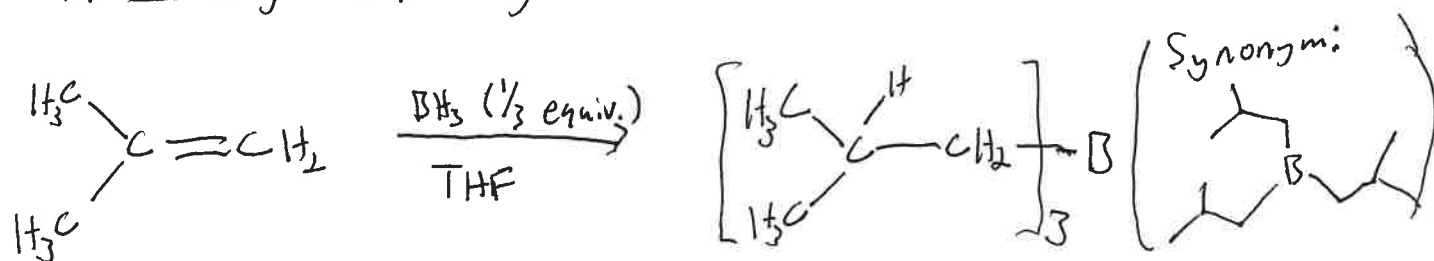
2-step process overall



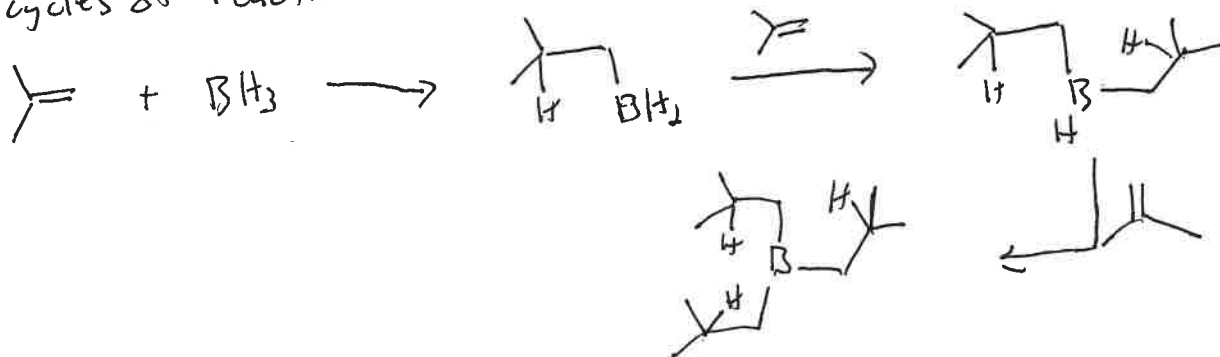
Note: Synthetically complimentary to acid catalyzed hydration or oxymercuration/reduction. i.e. starting from the same alkene you can get different isomers.



Step 1 ("Hydroboration")



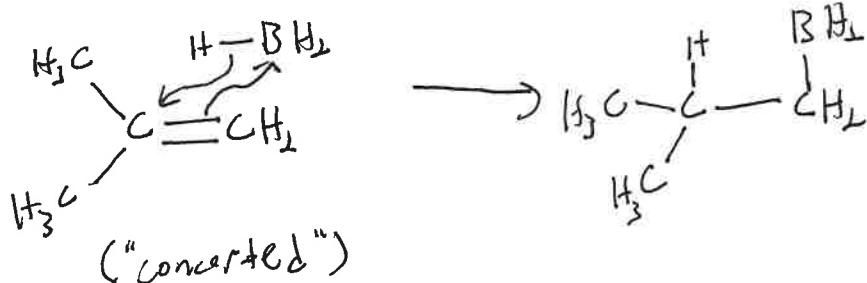
3 cycles of reaction



Course 343 Lecturer Sam Gellman
 Day Wednesday Date 10-5-16
 Notes Taken By Nels Gerstner Total # of Pages 4

Submit a *Single-sided Copy* to the Undergraduate Office
NO NOT STAPLE - ONLY WRITE NOTES INSIDE THE SQUARE BELOW

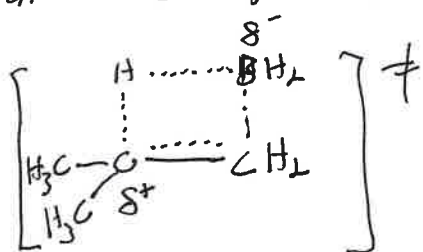
~~Hydroboration~~ Mechanistic Hypothesis:



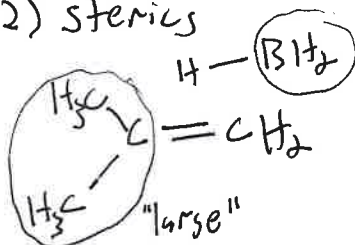
What is the origin of isomer selectivity?

2 explanations -

1) Partial charge distribution in transition state



2) sterics "large"



Two large groups orient themselves away from one another.